

ILLEGIB

Approved For Release 2003/12/09 : CIA-RDP78T05439A000200380101-0

Approved For Release 2003/12/09 : CIA-RDP78T05439A000200380101-0

~~TOP SECRET~~

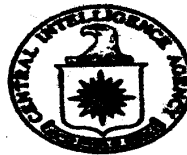
CIA/PIR-12/63
August 1963

CENTRAL INTELLIGENCE AGENCY
PHOTOGRAPHIC INTELLIGENCE REPORT

S-9599

SEARCH FOR URANIUM MINING IN THE VICINITY OF A-KO-SU, CHINA

Declass Review, NIMA/DoD



Published and Disseminated by

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

~~TOP SECRET~~

GROUP 1
Excluded from automatic
downgrading and declassification

TOP SECRET

CIA/PIR-12/63

SEARCH FOR URANIUM MINING IN THE VICINITY OF A-KO-SU, CHINA

25X1

SUMMARY AND CONCLUSIONS

25X1B

This report is in response to a request for a search from photography for uranium mining or other activity related to atomic energy within a 50-nautical mile (nm) radius of A-ko-su (41-10N 80-16E), Hsin-chiang Sheng (Sinkiang Province), China (Figure 1). Photography from four [] missions []

Sino-Soviet border (Figure 2). A supply base for this activity was not definitely located.

The activity observed near A-ko-su is identified as the mining of coal which may possibly contain uranium. Lignite deposits are known to exist in the vicinity of A-ko-su. []

[] was examined. The search revealed two areas of mining and prospecting activity located approximately 30 to 45 nm northeast of A-ko-su in the valleys of the Tien-shan range on the

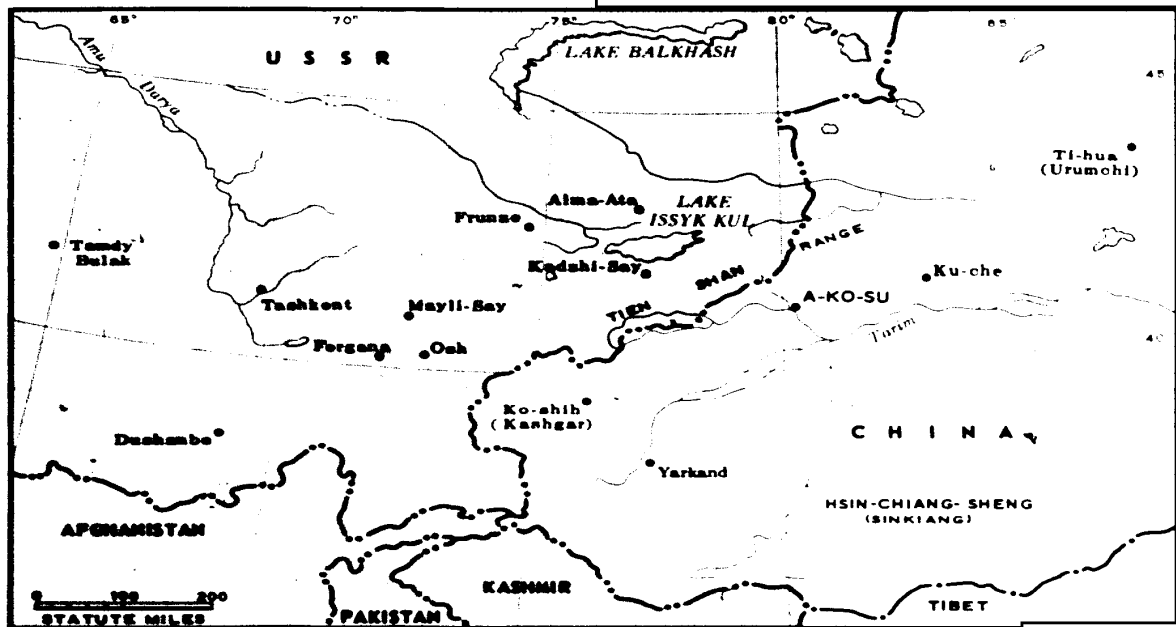


FIGURE 1. AREA OF SEARCH FOR URANIUM MINING.

TOP SECRET

25X

TOP SECRET

CIA/PIR-12/63

Although photographic evidence of uranium processing was not observed, the possibility of uranium extraction cannot be discounted.

25X1B

25X1B

PHOTOGRAPHIC OBSERVATIONS

The activity observed in the vicinity of A-ko-su is located in two areas which are designated in this report as the Eastern Area and the Western Area (Figure 2). In the Eastern Area, five mining sites, one prospecting site, a treatment plant, and a possible explosives magazine were observed. In the Western Area, three prospecting sites were observed. For purposes of description, site numbers have been assigned to identify the locations of mines and prospects.

25X1D

Evidence of Mining. The earliest photography [redacted] of the mining sites (all in the Eastern Area) showed a cluster of five mines at Site 5, all apparently in production, and two mines--one at Site 1 and another at Site 2--apparently being readied for production. The [redacted] photography revealed all mines in production and the presence of a higher pile of coal refuse, although the pile covered approximately the same area as it had in [redacted]

25X1D

25X1D

25X1B

25X1B

Production Estimate. Based on the observed accumulation of coal refuse at the treatment plant, the total cumulative production of coal in the Eastern Area from [redacted] (when digging probably began) to [redacted] is estimated at 30,000 to 40,000 metric tons. Coal production for the period [redacted] is estimated at 25,000 metric tons. If the observed mining prospect at Site 2 in the Western Area is developed into a producing mine, the area's annual coal production could increase by an additional 10,000 metric tons. These estimates do not allow for some local consumption of coal.

25X

25X1D

25X1B

25X1D

25X1D

25X1D

25X1D

25X1B

- 2 -

TOP SECRET

25X1

TOP SECRET

25X1

CIA/PIR-12/63

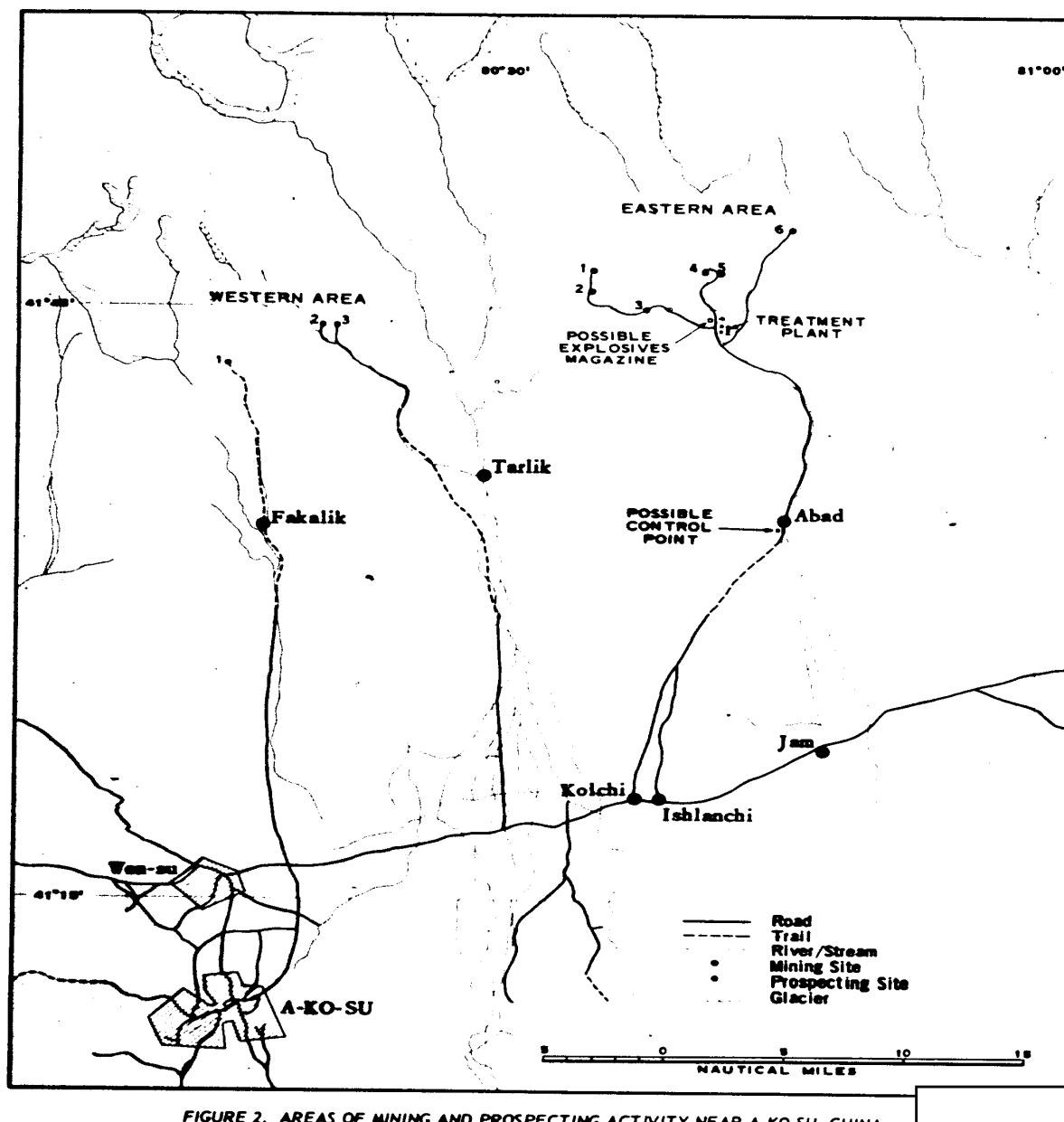


FIGURE 2. AREAS OF MINING AND PROSPECTING ACTIVITY NEAR A-KO-SU, CHINA.

- 3 -

TOP SECRET

25X

TOP SECRET

25X1

CIA/PIR-12/63

25X1B

25X1B

25X1B

[REDACTED]

Evidence of Security. The areas of mining activity are located in remote valleys. To the north is an area of high glacier-covered mountains, and to the south, treacherous sands are found on the alluvial fans at the valley mouths. The valleys physiographically resemble those emptying on the Fergana Valley of the USSR in being deep and narrow at their lower ends.

[REDACTED]

[REDACTED] Barracks-type buildings on the large farms (presumably state farms), 21 nm south-southeast of the mines near Jam, may house administrative support for the Eastern Area, and the farms, located on the northern edge of the irrigated plains, may supply provisions for the mining settlements.

EASTERN AREA

The Eastern Area, located approximately 39 nm north-northeast of A-ko-su, is the principal area of mining activity in the region (Figure 2). A treatment plant and a possible explosives magazine are centrally located with respect to the mining and prospecting sites in the area. Access to the area is by a road from Jam 21 nm to the south-southeast. A possible control point is located 10 nm to the south-southeast of the treatment plant on the access road and near the mouth of the valley. [REDACTED]

25X1B

[REDACTED]

Prison labor could be used at mine sites in these valleys with a minimum of control. Prisoners probably were brought to the mines in 1959 and 1960. Some security precautions were observed in the Eastern Area. A possible control point is located on the access road from Jam near the mouth of the first valley at Abad. Possible fences were observed at two of the mines (Sites 2 and 5).

25X1B

Search for a Support Base. A support base for the observed mining activity was not definitely located. [REDACTED]

25X1B

[REDACTED] No laboratory-type building was visible in the Eastern or Western Areas. Photography of the principal settlements--A-ko-su, Jam, and Wen-su--was examined closely. The activity at Wen-su, located in a valley with a steep eastern slope, is probably local in nature and not related to mining. A-ko-su is the most likely location for a general support base. Roads from the prospecting and mining sites converge on A-ko-su. Barnlike buildings on the eastern outskirts of the town and on the road to the mining areas may serve a support function. [REDACTED]

25X1B

25X1B

[REDACTED]

Treatment Plant (41-44N 80-42E). This plant is located at the junction of the access road from Abad with the road from the northwestern (Sites 1-3) and northern (Sites 4 and 5) sites and a road from the northeastern site (Site 6). The plant consists of two small adjoining square buildings identified as mills. A small pile of waste is located just south of each mill, a small rectangular building is located southeast of each mill, and a possible storage building is situated east of each mill.

[REDACTED]

25X1B

25X1B

25X1B

- 4 -

TOP SECRET

25X1

TOP SECRET

25X1

CIA/PIR-12/63

25X1B

Other features observed near the plant include the following: three medium-sized dormitory-type buildings located just west of the mills; a small square building identified as a possible control building located southwest of the plant on the west side of the access road; and a motor pool and/or equipment park, including a small rectangular building, located in a triangular area across the entrance-exit road.

Possible Explosives Magazine (41-44N 80-41E). This facility is located northwest of the treatment plant off the road to the western sites and near the junction with the road to the northwestern sites. Its location on the route between the mines and the treatment plant would allow trucks to carry return loads of explosives to the mines. The possible explosives magazine is secured and road served. Although this facility appeared on the [] photography to be inactive, light activity indicating partially operating mines was observed on the [] photography.

Site 1 (41-47N 80-35E). This site is located on the eastern side of a valley and contains an opencut mine. A village is located west of the mine in a valley. The [] photography indicated that the mine was being readied for production. The site is the western terminus of a well-traveled road which also serves Sites 2 and 3. The road was not being used extensively in [] photography.

Site 2 (41-46N 80-35E). This site contains an open-pit mine, the largest mine in the area.

Site 3 (41-45N 80-38E). Site 3 consists of two small opencut prospects which are located halfway up the west side of a ridge. The site probably contains only limited reserves of coal.

Site 4 (41-47N 80-41E). This site contains a possible opencut mine and a small housing area. The site is located on a perched upper slope. It is served by a branch from the well-traveled road which also serves Site 5. The mine appeared to be inactive on the []

Site 5 (41-47N 80-42E). This site is the oldest and best developed mining site in the area. It consists of a large portal mine located on the eastern side of a valley and a cluster of four small opencut mines located on the broken western slope of the valley where faults probably limit the availability of reserves. The portal mine may have large reserves. A small pile, probably of coal, is observed on the floor of the narrow valley at the junction of a loop road serving these mines and the road to the treatment plant. A possible housing area is located in the center of the valley. A possible guard fence, with guard towers, crosses the valley below the mines and the possible housing area. A fence partially encloses the portal mine.

- 5 -

TOP SECRET

25X1

TOP SECRET

25X1

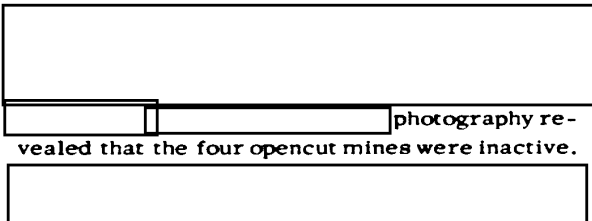
CIA/PIR-12/63

25X1B

25X1B

25X1D

25X1B



photography revealed that the four opencut mines were inactive.

Site 6 (41-49N 80-46E). Site 6 contains three small opencut mines located halfway up the eastern slope of a ridge. Each mine is served by a steep, well-defined trail. Scattered settlements are located 3 nm down the valley. The

25X1D

25X1B

25X1B

photography indicated that the mines were inactive.



WESTERN AREA

The Western Area, located approximately 34 nm north of A-ko-su, contains three prospecting sites (Figure 2). A prospect at one of the sites (Site 2) is being developed for a mine. The sites are served by two separate trails. Routes suitable for vehicle use have been observed.

Site 1 (41-42N 80-15E). Site 1 contains a prospect located in a mountain meadow, and

numerous trails leading to cliffs indicate other prospecting activity. Three rows of unidentified objects, possibly huts or stacks of supplies, were observed in a valley west of the prospect. Ten small settlements near the site serve as centers for farming and prospecting. The principal trail serving the site leads southward through the village of Fakalik where it becomes a secondary road leading to the east side of A-ko-su.

Site 2 (41-44N 80-20E). Site 2 contains an opencut prospect which is being cleared for an open-pit mine. This prospect is located at the foot of the western side of a low mountain. Trails lead up the broken slopes of the mountain to small prospects. On the photograph at the time of snow cover, the prospect appeared as a small dark area, and tracks connected it with a village around the mountain. The photograph revealed a much wider and darker area at the prospect.

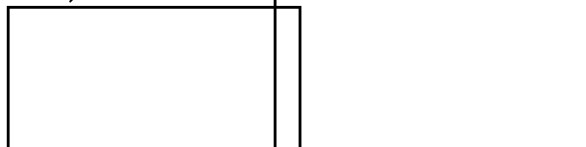
Site 3 (41-44N 80-21E). Site 3 contains five irregularly shaped opencut prospects which are located halfway up the eastern side of the mountain. A trail connects this site with a small settlement in the valley.

BACKGROUND

According to a Soviet geologist, V. M. Sinitsyn, geological reconnaissance of the north-western part of the Tarim Basin began in 1942-43. 3/ Geological field work continued intermittently until 1952-53 when localized detailed studies were carried out. In 1953 Sinitsyn prepared a geological map of the region as a guide to prospecting, and during 1955-56 he drafted a report on the region. 3/

Photography of showed that roads had been built from A-ko-su northward to the mining areas and that opencut mining and treatment of coal had been started. These de-

velopments indicated that initial geological work and prospecting were probably in progress by 1958, if not earlier.



After prospecting during 1956-1957 the accumulation of coal shown by the reconnaissance indicates that miners were brought to the mines by 1959-1960. The presence of control points and fences in a mountainous

- 6 -

25X1D

TOP SECRET

25X1

TOP SECRET

25X1

CIA/PIR-12/63

region indicates the miners probably are prisoners.

The usual prospecting practice of trenching, pitting, and drilling was not seen at the prospects near A-ko-su. In order to confirm the size and extent of the deposits exposed at a likely prospect, the exposure of the outcrop is widened by digging away the overburden.

GEOLOGY OF THE A-KO-SU REGION

The geology of the Sino-Soviet border region supports the possibility that uranium is present in the ores mined near A-ko-su. The valleys where mining is observed near A-ko-su are geologically contemporaneous and lithologically similar to those emptying on the Fergana Valley in the USSR where lignite coal of the Jurassic geological age is mined. Likewise, at Kadzhi-Say, USSR, northwest of A-ko-su, lignites also of Jurassic age have been described. ^{4/} The A-ko-su, Fergana Valley, and the Kadzhi-Say

regions are seen on photography to have deeply eroded east/west throughgoing fault zones. Such fault or crush zones would facilitate the descent of uraniferous ground water. The broken or faulted lignite seams would provide a reducing environment for the precipitation of the uranium from the percolating ground water. The coal seams north of A-ko-su are broken by a series of north/south faults whose crushed-rock zones have been enlarged by swiftly flowing rivers. The broken and faulted character of the A-ko-su mining region limits a knowledge of the reserves and makes prospecting and mining costly and uncertain. Sinitsyn concluded that special work would show the location of the coal-bearing zones. ^{3/} He stated that the eastern or Kuche (Kuchar) coal basin which includes the A-ko-su region is the counterpart of the western or Yarkand-Fergana basin which extends from southern Hsin-chiang Sheng (Sinkiang) into the USSR. The appearance from photography of the region north of A-ko-su agrees with Sinitsyn's brief generalized geological description.

TOP SECRET

25X1

TOP SECRET

25X1

CIA/PIR-12/63

REFERENCES

PHOTOGRAPHY

Mission	Date	Pass	Camera	Frames	Classification
---------	------	------	--------	--------	----------------

25X1D

MAPS OR CHARTS

AMS. Series ESPA-1, Sheet NK-44-8, 1st ed, Aug 62, scale 1:250,000 (TOP SECRET

25X1

ACIC. US Air target Chart, Series 200, Sheet 0329-19A, Jun 59, scale 1:200,000 (SECRET)

ACIC. WAC 329, Jul 59, scale 1:1,000,000 (CONFIDENTIAL)

25X1C

DOCUMENTS

1. NSA. 23 Nov 56 (TOP SECRET

25X1

2. NSA. 14 Aug 57 (TOP SECRET

3. Sinitsyn, V. M. Northwest Part of the Tarim Basin (Severo-Zapadnaya Chast Tarimskovo Basseyna), Geological Institute, Academy of Sciences of the USSR, Moscow, 1957 (UNCLASSIFIED)

4. CIA. PIC/JR-7/59. Uranium Mining and Milling Complex, Kadzhi-Say, USSR, May 59 (TOP SECRET

REQUIREMENT

25X1

CIA. OSI/R-197/62

PROJECT NUMBER

C-878/62

25X1

TOP SECRET